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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/597,825

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Kazuji Kobayashi

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EXAMINER

ELBIN, JESSE A

ART UNIT

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2615

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/597,825	Applicant(s) KOBAYASHI, KAZUJI	
	Examiner JESSE A. ELBIN	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09 August 2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figures 6-7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 6 #23.
4. Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities: paragraph [0002] fails to mention reference character 23 in Figure 6, which appears to be the voice coil. See drawing objection above.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 7 both claim “a front yoke...is loosely disposed between: an upper surface of a magnetic pole of said base yoke; and, said front yoke to provide a necessary clearance between these yokes”. It is unclear how the front yoke is disposed between the base yoke and itself. For the purposes of the art rejection below, “a front yoke...is loosely disposed between: an upper surface of a magnetic pole of said base yoke; and, said front yoke” will be interpreted as “a front yoke...is loosely disposed between: an upper surface of a magnetic pole of said base yoke; and, a half portion of the casing (10a)” as supported by Figures 4-5.

8. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The last line of **claim 7** states “said base yoke to have its peripheral edge supported by an inner surface of said casing” without previously mentioning a casing.

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For the purposes of the art rejection below, "said casing" will be interpreted as "a casing".

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-3, 5, 7-8, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hofer (US Patent 4,843,628 ('628)).

Regarding claim 1, Hofer teaches a bone conduction device (inertial receiver; title) comprising: a base yoke (Fig. 2 #36) carrying both a voice coil (Fig. 2 #40) and a magnet (Fig. 2 #30); and, a front yoke (armature; Fig. 2 #16), which assumes a flat plate-like shape (Fig. 1 #16) and is loosely disposed between: an upper surface of a magnetic pole of said base yoke (#36); and, a half portion (Fig. 2 #12) of the casing (Fig. 2 #12,14) to provide a necessary clearance between these yokes (Fig. 2 between #34 and #18), wherein said device is characterized in that said clearance is produced by means of a resilient element (brass ring; Fig. 2 #22), which is disposed in an outer peripheral portion of said base yoke (#36) to receive said front yoke (#16) thereon (via #18).

Regarding claim 2, Hofer remains as applied above.

Hofer further teaches said base yoke (#36) being provided with a circular base (Fig. 1); and, said resilient element (#22) assumes an arcing shape (Fig. 1 *illustrates #22 as a circular component*) extending along said base (Fig. 2 *illustrates #22 surrounding said base, connected via magnet #30*).

Regarding claim 3, Hofer remains as applied above.

Hofer further teaches said front yoke (armature; #16) being fixedly mounted in an inner surface of a casing without using any screw (“bonded by epoxy or the like to the interior of the closed end of the inner housing”; col. 2 lines 38-41).

Regarding claim 5, Hofer remains as applied above.

Hofer further teaches said magnet (#30) being disposed outside said voice coil (Fig. 2).

Regarding claim 7, Hofer teaches a bone conduction device (inertial receiver; title) comprising: a base yoke (Fig. 2 #36) carrying both a voice coil (Fig. 2 #40) and a magnet (Fig. 2 #30); and, a front yoke (armature; Fig. 2 #16), which assumes a flat plate-like shape (Fig. 1 #16) and is loosely disposed between: an upper surface of a magnetic pole of said base yoke (#36); and, a half portion (Fig. 2 #12) of the casing (Fig. 2 #12,14) to provide a necessary clearance between these yokes (Fig. 2 between #34 and #18), wherein said device is characterized in that said clearance is produced

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by means of a damper (brass ring; Fig. 2 #22), which is mounted on said base yoke (#36) to have its peripheral edge (*connected to magnet #30*) supported by an inner surface of a casing (Fig. 2 #12,14 *wherein the peripheral edge is supported by the inner surface of #14 via #38, #36, and #30*).

Regarding claim 8, Hofer remains as applied above.

Hofer further teaches said front yoke (armature; #16) being fixedly mounted on an inner surface of a casing without using any screw (“bonded by epoxy or the like to the interior of the closed end of the inner housing”; col. 2 lines 38-41).

Regarding claim 10, Hofer remains as applied above.

Hofer further teaches said magnet (#30) being disposed outside said voice coil (Fig. 2).

11. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hofer (US Patent 4,843,628 ('628)) as applied to claims 3 and 8 above, and further in view of Wei (US Patent 6,389,140 ('140)).

Regarding claim 4, Hofer remains as applied above.

Hofer does not explicitly teach said front yoke being fixedly mounted in a yoke reception portion of said inner surface of said casing in an insertion manner.

In the same field of endeavor, Wei teaches said front yoke ('140 Fig. 1 #8 *wherein Wei teaches #8 is a block of high density foam used to transmit vibrations from the piezoelectric element to the casing; col. 2 lines 64-66*) being fixedly mounted in a yoke reception portion (securing portion; '140 Fig. 1 #21) of said inner surface of said casing ('140 Fig. 1 #1) in an insertion manner ('140 Fig. 1) for the benefit of more securely attaching the vibration transmitting member to the inner surface of the casing.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include a securing portion on the casing of the bone conduction device as taught by Wei on the device taught by Hofer for the benefit of more securely attaching the vibration transmitting member to the inner surface of the casing.

Regarding claim 9, Hofer remains as applied above.

Hofer does not explicitly teach said front yoke being fixedly mounted in a yoke reception portion of said inner surface of said casing in an insertion manner.

In the same field of endeavor, Wei teaches said front yoke ('140 Fig. 1 #8 *wherein Wei teaches #8 is a block of high density foam used to transmit vibrations from the piezoelectric element to the casing; col. 2 lines 64-66*) being fixedly mounted in a yoke reception portion (securing portion; '140 Fig. 1 #21) of said inner surface of said casing ('140 Fig. 1 #1) in an insertion manner ('140 Fig. 1) for the benefit of more securely attaching the vibration transmitting member to the inner surface of the casing.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include a securing portion on the casing of the bone conduction device as

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taught by Wei on the device taught by Hofer for the benefit of more securely attaching the vibration transmitting member to the inner surface of the casing.

12. Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hofer (US Patent 4,843,628 ('628)).

Regarding claim 6, Hofer remains as applied above.

Hofer does not explicitly teach said magnet being disposed inside said voice coil.

Examiner takes official notice that various designs of the magnetic circuit are well known in the art. Speaker systems routinely adjust the components of the magnetic circuit depending on the requirements of the design. Speaker systems using ring magnets, plate magnets, or plug magnets are all well known, and their respective performance characteristics are all well known. Placement of the magnet inside the voice coil would have been obvious, with a minimal amount of experimentation, to one of ordinary skill in the art at the time of the invention.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a magnetic circuit design with the magnet disposed inside the voice coil on the device taught by Hofer, depending on the requirements of the design.

Regarding claim 11, Hofer remains as applied above.

Hofer does not explicitly teach said magnet being disposed inside said voice coil.

Examiner takes official notice that various designs of the magnetic circuit are well known in the art. Speaker systems routinely adjust the components of the magnetic circuit depending on the requirements of the design. Speaker systems using ring magnets, plate magnets, or plug magnets are all well known, and their respective performance characteristics are all well known. Placement of the magnet inside the voice coil would have been obvious, with a minimal amount of experimentation, to one of ordinary skill in the art at the time of the invention.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a magnetic circuit design with the magnet disposed inside the voice coil on the device taught by Hofer, depending on the requirements of the design.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Kuwabara (US PGPub 2002/0126868) teaches an electromagnetic sound producing device.
- b. Fukuda (US PGPub 2003/0012395) teaches a bone conducting speaker.
- c. Kobayashi (WO 03/101146) teaches a bone conductive speaker with a magnet place inside the voice coil.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSE A. ELBIN whose telephone number is (571)270-3710. The examiner can normally be reached on Monday through Friday, 8:00am to 5:00pm EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Suhan Ni can be reached on (571) 272-7505. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. A. E./
Examiner, Art Unit 2615

/Suhan Ni/
Primary Examiner, Art Unit 2614